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Impacts of the Dantean Anomaly (1309–1321) in Central Europe East of the Rhine

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1000 Worte Forschung: *Ongoing PhD thesis (Medieval History) at the University of Leipzig*

Whereas the era of the Great Famine has been investigated in some depth for the area of modern Hungary and Slovakia,[1] recent research has largely neglected Central Europe east of the Rhine.[2] This subproject of the Dantean Anomaly Junior Research Group focuses therefore on the region of present-day Germany, Austria, Switzerland, Slovenia, the Czech Republic,[3] and Poland. Depending on the direction the study develops, it may also address the former territories of the Teutonic Order to the extent that the historical record allows.

The first step is to reconstruct the climatic patterns over a broad time span (1200–1400) for the entire area of the study, which will, however, be split into several sub-regions based on the availability of sources and observed climate patterns. The second part of the investigation will draw on case studies in regions which provide exceptionally good source material to examine the Dantean Anomaly in more detail.

The climate reconstruction will draw on narrative sources such as chronicles and annals, mostly available in the form of edited volumes. Several published collections of sources concerning climate and famines will provide additional information.[4] Climate-related remarks in annals and chronicles

[1] Cf. the publications of Andrea Kiss and András Vadas.
[2] The Empire is indeed addressed, but not investigated systematically, in William Chester Jordan, The Great Famine. Northern Europe in the Early Fourteenth Century, Princeton 1996.
[3] The Czech Republic is well researched concerning narrative sources (without the use of indices), while administrative documents have yet to be systematically investigated. Cf. Rudolf Brazdil and Oldrich Kotyza, History of Weather and Climate in the Czech Lands, vol. 1: Period 1000-1500, Zurich 1995.
[4] The most extensive collection is found in: Pierre Alexandre, Le climat en Europe au Moyen Âge, Paris 1987. Very helpful is moreover: Fritz Curschmann, Hungersnöte im Mittelalter. Ein Beitrag zur deutschen Wirtschaftsgeschichte des 8.-13. Jahrhunderts, Leipzig 1900. Another source collection has recently been provided online: Curt Weikinn's handwritten index cards regarding climate history in Europe during the past 2000 years (meteorological part): https://freidok.uni-freiburg.de/data/11658 (latest access: 5.12.2017). The hydrographical part has long been published: Curt Weikinn, Quellentexte zur Witterungsgeschichte Europas von der Zeitenwende bis zum Jahre 1850. Hydrographie, 2 vol., Berlin 1958 and 1960. For the Czech Republic, Brazdil and Kotyza have included an overview about weather related events (see note 3), and for Poland Malgorzata Hanna Malewicz has gathered evidence about natural phenomena

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vary from brief comments on the nature of the season or the occurrence of certain extreme events to detailed descriptions of the climatic circumstances and their impact on the population. In some cases, they include additional information about relief measures or societal responses. This information is important for the second part of the investigation, which, in contrast to the rather positivist climate reconstruction, addresses questions regarding societal impacts and reactions.

An interesting example of local memoria: The so-called "Hungermännchen" (hunger manikin) from Blankenburg. The inscription above the figure reads: "A(nn)o 13xvi galt eȳ malt korn xiiii guld" and refers to noteworthy high grain prices in the year 1316, during the Great Famine. Photo: Martin Bauch, CC BY-SA.

This main part of the study will draw on additional source material to investigate further the core period of the Dantean Anomaly (1309–1321), beginning with the examination of charters. Thanks to edited registers, these are quite accessible, and their value for the study of climate history has already been proven.[5] Although they do not often refer explicitly to weather or climate, it is possible to infer certain information. A charter from Xanten, for example, relates how priests there were prompted in 1315 to participate in the so called "Viktorstracht," a relics procession to obtain forgiveness for sins which God was punishing with severe weather, disease, and increased

in: Zjawiska przyrodnicze w relacjach dziejopisarzy polskiego sredniowiecza, Wroclaw 1980, pp. 93–163. Furthermore, the most modern version of source compilations is to be mentioned: the Tambora Online Database (www.tambora.org), which nevertheless also relies on older compilations and forfeits a lot of its possible usefulness due to lacking source criticism.

[5] Cf. especially András Vadas, Weather Anomalies and Climatic Change in Late Medieval Hungary. Weather Events in the 1310s in the Hungarian Kingdom, Saarbrücken 2010.

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mortality.[6] Furthermore, charters contain other kinds of indirect evidence about climate: accounts of the destruction of infrastructure, decreased income, etc., can be compared with the climate reconstruction to determine to what extent there is a correlation to known climate patterns or weather events.

In addition to analyzing these published documents, this subproject aims to develop several case studies based on archival source material. These are intended to yield a more detailed picture of the crucial period and to assess the impact of its worsening climate on different communities, social strata, or institutions. These sources may come from city governments, monasteries, or knightly orders; ideally, they will report information over longer periods, for example, as one might expect from financial account books or rent-rolls.

Bread measures from the Freiburg Minster. They show the standardized loaf sizes for bread in the years 1270, 1317, and 1320, whereby especially the particularly small loaf in the year of the Great Famine, 1317, (lower right) is striking. Photo: Lutz Mager (Wikimedia Commons), CC BY-SA 2.5.

Archaeological evidence as well as artwork and inscriptions—for example, flood marks or bread measurements on public buildings—should complement the written sources. An excellent example of epigraphical evidence, which also shows how different types of sources may complement each other, is found in the memorial stone from Schmidtstedt, a village near Erfurt that has since been deserted. It bears witness to the extent and impact of the Great Famine and its collective memoria

[6] For details and sources see Jens Lieven, Die Geißlerbewegung im Rhein-Maasraum, in: Mittelalter an Rhein und Maas. Beiträge zur Geschichte des Niederrheins, ed. by Uwe Ludwig and Thomas Schilp, Münster 2004, pp. 125-136, here p. 125.

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by recording the death of almost 8,000 victims. A local chronicle confirms this information, describing five mass graves just outside the town. A charter from 1341—issued in the context of a procession, which had been initiated for further commemoration of the famine and its victims—reveals the exact burial site.[7]

The memorial stone from Schmidtstedt, remembering the victims of the Great Famine. For the text of the inscription and further details see: Martin Bauch, Nr. 1.1 Gedenkstein für die Hungeropfer des Jahres 1316 aus Schmidtstedt bei Erfurt, in: Ausstellungs-Katalog Karl IV. 1316–2016, ed. by Jiří Fajt and Markus Hörsch, Praha 2016, p. 280. The stone is now housed at the Angermuseum Erfurt, inventory no. VIII 54. Photo: © Angermuseum Erfurt, Dirk Urban.

The historical sources are complemented by a great density of natural proxy data for Central Europe. Information provided by dendrochronology, geomorphology, and warve chronology[8] can serve to check and flesh out the results of the reconstruction. It is thus potentially possible to contextualize inconclusive findings even where unambiguous evidence from historical sources is lacking.

By combining information about the extent of climatic changes and regional differences with insights about their perception by contemporaries, the study will strive to describe patterns of interpretation and coping strategies and identify the defining factors which influenced how vulnerable communities and individuals were to natural climatic challenges.

[7] For details and sources see Tim Erthel, Der Schmidtstedter Gedenkstein von 1316, in: Mitteilungen des Vereins für die Geschichte und Altertumskunde von Erfurt 70 (2009), pp. 8-16.
[8] For a short summary about existing reconstructions from natural proxies see: Fredrik Charpentier Lundqvist, A regional approach to the medieval warm period and the little ice age, in: InTech 2010, here pp. 12-14: http://www.intechopen.com/books/climate-change-and-variability/a-regional-approach-to-the-medieval-warmperiod-and-the-little-ice-age (latest access: 8.12.2017).